

Safety Data Sheet

1. Chemical product and company identification

Product name : HYDROGEN PEROXIDE

Company information

Name of manufacturer : KANTO CHEMICAL CO., INC.
 Address : 2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, Japan
 Name of section : Electronic materials division technical department
 Telephone number : +81-3-6214-1080
 Facsimile number : +81-3-3241-1043
 Mail address : el-info@kanto.co.jp
 Reference No : GE00311 1.1
 Recommended uses and restrictions : Electronic chemicals

2. Hazards identification

GHS classification

Physical hazards	Oxidizing liquids	Category 2
Health hazards	Acute toxicity (oral)	Category 4
	Acute toxicity (dermal)	Category 4
	Acute toxicity (inhalation:vapors)	Category 4
	Acute toxicity (inhalation:dust/mist)	Category 4
	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1
	Carcinogenicity	Category 2
	Specific target organ toxicity (single exposure)	Category 1 (respiratory organs)
Environmental hazards	Specific target organ toxicity (repeated exposure)	Category 1 (respiratory organs)
	Aquatic acute	Category 1

Hazard pictograms



Signal word : Danger

Hazard statements : May intensify fire; oxidizer
 Harmful if swallowed, in contact with skin or if inhaled
 Causes severe skin burns and eye damage
 Suspected of causing cancer
 Causes damage to organs (respirator organs)
 Causes damage to organs (respiratory organs) through prolonged or repeated exposure

Very toxic to aquatic life

Precautionary statements

- Prevention : Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep away from clothing and other combustible materials.
Do not breathe mist/ vapors.
Wash hands, forearms and face thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.
- Response : IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
IF SWALLOWED: Rinse mouth. Do not induce vomiting.
IF ON SKIN: Wash with plenty of water.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water .
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Call a POISON CENTER or doctor.
IF exposed or concerned: Get medical advice/attention.
Immediately call a POISON CENTER or doctor.
Call a POISON CENTER or doctor if you feel unwell.
Get medical advice/attention if you feel unwell.
Take off contaminated clothing and wash it before reuse.
Collect spillage.
- Storage : Store locked up.
- Disposal : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

3. Composition/information on ingredients

Distinction of substance or mixture : Substance

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Hydrogen peroxide	31	H2O2	Listed	231-765-0	7722-84-1

4. First aid measures

First aid measures

- First-aid measures after inhalation : Remove the victim to fresh air, and make him blow his nose and gargle. If necessary, get medical treatment.
- First-aid measures after skin : Wash the affected areas under running water.



contact

First-aid measures after eye contact : Wash the affected areas under running water for at least 15 minutes. Get medical treatment.

First-aid measures after ingestion : Rinse mouth with water. Give the victim one or two glasses of water or milk. Do not induce vomiting. Get medical treatment as soon as possible.

Personal Protection in First Aid and Measures : Rescuers should wear proper protective equipment like rubber gloves, goggles.

Most Important Symptoms/Effects

Symptoms/effects : When it adheres to the skin, it causes painful vitiligo.

5. Fire fighting measures

Suitable extinguishing media : This product is noncombustible.

Unsuitable extinguishing media : None

Firefighting instructions : Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.

Personal protection (Emergency response) : Firefighters should wear protective equipment.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

General measures : Wear proper protective equipment and avoid contact with skin and inhalation of vapor. Conduct operations from upwind and evacuate people downwind. Keep away personnel except for authorized ones from spillage area by stretching ropes.

Environmental precautions

Environmental precautions : Attention should be given to avoid discharge of spilled product into rivers and resulting environmental damage. When diluting spill with large amounts of water, discharge of untreated wastewater into the environment must be avoided.

Methods and Equipment for Containment and Cleaning up

For containment : Absorb spill with inert material (e.g, diatomaceous earth, sand) and flush spillage area with copious amounts of water.

7. Handling and storage

Handling

Technical measures : Wear proper protective equipment to avoid contact with skin or inhalation of vapor.

Precautions for safe handling : Do not contact with metal powder, alkaline substances, or easy oxidized organic compounds.

Storage

Storage conditions : Store in a dark, cool place and tightly closed.
The gas-vent cap is used to evacuate the inside gas. Do not put it sideways to avoid leaking after leaving it too long or under pressurization.

Material used in packaging/containers : Polyethylene, fluorine resin.



8. Exposure controls / Personal protection equipment

ACGIH TWA	1 ppm
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Appropriate engineering controls : Use with an enclosed system or a local exhaust ventilation.

Protective equipment

Respiratory protection : If necessary, wear a chemical cartridge respirator with acidic gases.

Hand protection : Impervious protective gloves

Eye protection : Safety goggles

Skin and body protection : Protective clothing, protective boots

9. Physical and chemical properties

Physical state	: Liquid
Color	: Colorless.
Odor	: Slight characteristic
pH	: 3.8
Melting point	: -25.7 ° C
Freezing point	: No data available
Boiling point	: 106.2 ° C
Flash point	: Non flammable.
Auto-ignition temperature	: Non flammable.
Decomposition temperature	: No data available
Flammability	: Non flammable.
Vapor pressure	: 18 hPa (20°C)
Relative density	: No data available
Density	: 1.11 g/cm ³ (20°C)
Relative gas density	: No data available
Solubility	: Water: Miscible.
Partition coefficient n-octanol/water (log Pow)	: -1.36
Explosive limits (vol %)	: No data available
Viscosity, kinematic:	: No data available
Particle characteristics	: No data available

10. Stability and reactivity

Reactivity	: It is a strong oxidant and reacts with many inorganic and organic compounds.
Chemical stability	: Stable under normal conditions. When heated, it releases oxygen and decomposes.
Possibility of hazardous reactions	: Decomposes by metal powder, alkaline substances, or organic substances and emits oxygen. Contact with ammonia may cause explode.
Conditions to avoid	: Light, heat.
Incompatible materials	: Metal powders, alkaline substances and organic substances.
Hazardous decomposition	: Oxygen.



products

11. Toxicological information

Acute toxicity (oral)	:	Harmful if swallowed rat LD50=805mg/kg (70% H2O2)
Acute toxicity (dermal)	:	Harmful in contact with skin rabbit LD50=690mg/kg (90% H2O2)
Acute toxicity (inhalation)	:	No classification (gas) Harmful if inhaled
Acute toxicity (vapor) - Description	:	rat LC50=4108ppm/4h
Acute toxicity (mist) - Description	:	mouse LC50=0.46-1.00mg/L/4h (90% H2O2)
Skin corrosion/irritation	:	Causes severe skin burns The conclusion with necrosis which penetrates to all layers of the skin or corrosivity is indicated in 3-minute, 1-hour, or 4-hour application on rabbits. Thus, it was classified into category 1B.
Serious eye damage/irritation	:	Causes serious eye damage The product is a skin corrosive substance. There is a publication that it shows severe irritation in animals and it is corrosive. Based on the above information, it was classified into category 1.
Respiratory sensitization	:	Classification not possible
Skin sensitization	:	Classification not possible
Germ cell mutagenicity	:	No classification As for in vivo tests, there are negative data on micronucleus assay in mouse bone marrow cells and chromosome adderration test in rat bone marrow cells. As for in vitro tests, there are positive data on riverse mutation test in bacteria, gene mutation examination in cultuered mammalian cells, chromosome aberration test.
Carcinogenicity	:	Suspected of causing cancer ACGIH classifies it as the group A3(confirmed animal carcinogen with unknown relevance to humans).
Reproductive toxicity	:	Classification not possible
STOT-single exposure	:	Causes damage to organs (respiratory organs) The irritations to the nose, the throat, and the tracheal are reported in humans and animals(rat, mouse). In animals(rat, mouse), there are the descriptions that it causes the congestion, pneumonedema, emphysema of lung and tracheal and necrosis of tract epithelium within the dosage (0.34-0.43 mg/L) of the guidance level of category 1. Based on these results, it was classified into category 1 (respiratory organs).
STOT-repeated exposure	:	Causes damage to organs (respiratory organs) through prolonged or repeated exposure In the inhalation test of vapor in dogs and rats, fibrous tissues appear here and there in pneumoconiosis with the dosage (0.005-0.01 mg/L) of guidance value range of category 1, and there was the statement that mixture of atelectatic lung area and emphysema area (dogs), and necrosis and inflammation in nasal epithelium and cell infiltration in larynx (rats) are seen and it has irritation in nose, throat in humans and there is a risk of developing pulmonary edema in the worst case. Thus, it was classified into category 1(respiratory organs).
Aspiration hazard	:	Classification not possible



12. Ecological information

Ecotoxicity

Aquatic acute : Very toxic to aquatic life
Nitzschia sp. EC50=0.85mg/L/72h

Aquatic chronic : No classification

Persistence and degradability

Readily biodegradable

Bioaccumulative potential

Low bioconcentration
log Pow : -1.36

Mobility in soil

High mobility
Koc : 0.85

Hazardous to the ozone layer

Ozone : Classification not possible

13. Disposal considerations

Ecological waste information : Dilute the chemical with a large amount of water and flush in a drain.
Or consult approved disposal companies.

Contaminated container and packaging : In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

14. Transport information

International Regulations

Transport by sea(IMDG)

UN-No. (IMDG) : 2014
Proper Shipping Name (IMDG) : HYDROGEN PEROXIDE, AQUEOUS SOLUTION
Packing group (IMDG) : II
Transport hazard class(es) (IMDG) : 5.1 (8)

Air transport(IATA)

UN-No. (IATA) : 2014
Proper Shipping Name (IATA) : Hydrogen peroxide, aqueous solution
Packing group (IATA) : II
Transport hazard class(es) (IATA) : 5.1 (8)

Marine pollutant : Applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollutant category : Y
MFAG-No : 140

15. Regulatory information

Regulatory information with regard to this substance in your country or region should be examined by your own responsibility.



16. Other information

Data sources

- : Handbook of dangerous and hazardous chemicals, Japan Industrial Safety & Health Association. (2000-2001) .
- Dangerous Properties of Industrial Materials, 6th ed. N. I. Sax Van Nostrand Reinhold Company (1984) .
- Handbook of Dangerous Substances Springer-Verlag Tokyo (1991) .
- Handbook of 17322 Chemical Products, The Chemical Daily Co. (2022) .
- Handbook of Poisonous and Deleterious substances, revised and enlarged edition, Yakumu Kohosa (2000) .
- NITE Chemical Risk Information Platform (NITE-CHRIP), National Institute of Technology and Evaluation.

The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully. The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements. The information herein is only provision of information, and it does not represent a guarantee the properties of the product. The Safety Data Sheet (SDS) is prepared based on JIS Z7253.

